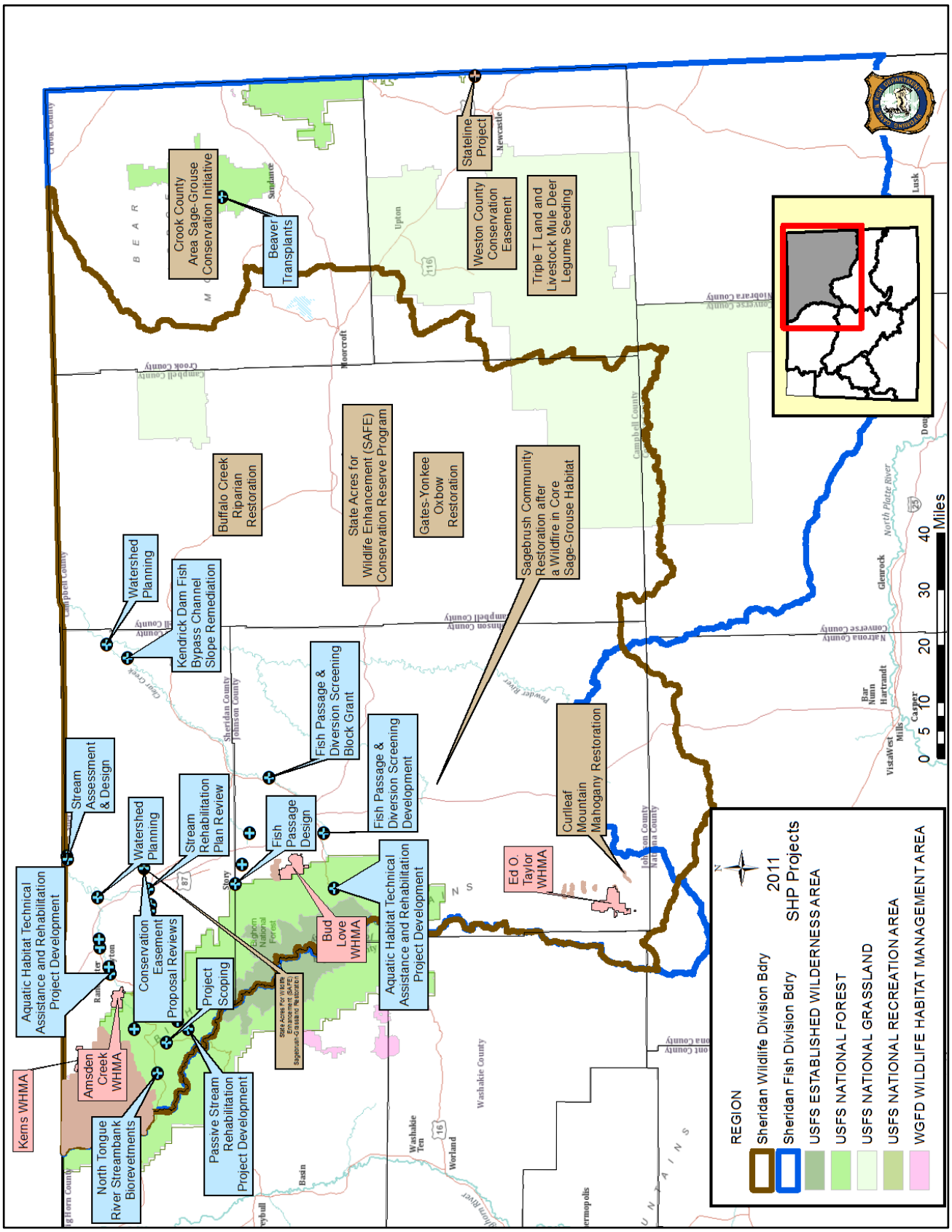
SHERIDAN REGION



SHERIDAN REGION HIGHLIGHTS

- Improved the function of the Kendrick Dam fish bypass channel
- Transplanted five beaver to improve riparian water table storage
- Assisted partners in completing two fish passage projects and one streambank stabilization
- Assisted with 41 aquatic and riparian habitat project development, review, and education efforts, which fostered partnership developments with 12 emerging projects
- Inventoried or monitored 28 miles of stream and riparian corridors
- Removed conifers from 1,000 acres of curleaf mountain mahogany communities
- 250 acres of rangeland were aerated and seeded with sagebrush, forbs, grasses and other shrubs
- 42 acres of riparian habitat were restored
- 112 acres were inter-seeded with legumes to improve mule deer forage with a private landowner in Johnson County

Weston County Conservation Easement (Goal 1) – Erika Peckham

Preliminary inventory analysis was initiated on a proposed 758 acre conservation easement (Figure 1) adjacent to an easement proposed the previous year. This property provides yearlong habitat for mule deer, white-tailed deer and various other wildlife. The South Black Hills crucial priority and enhancement areas are located just east and southeast of this location. Development pressure is one of the primary concerns and an action that has been identified in the area. Additional inventory information and funding interest data will be compiled next year.

Figure 1. Weston County conservation easement.

East Slope Big Horn Mountain Conservation Easement (Goal 1) – Bert Jellison

Within the WGFD Sheridan Region, TNC is the leader in long-term conservation of wildlife habitats. Because they are a valued partner, the terrestrial habitat biologist participates on TNC's Northeast Wyoming Advisory Board and assists their program director with planning and project implementation. Several conservation easements are being planned by TNC and the RMEF. The most current one is the HF Bar Ranch, located 15 miles northwest of Buffalo, WY. The 2,300 acre proposed conservation easement will be held by TNC and will restrict future subdivision, while allowing agricultural and guest ranch activities to continue. It will protect both crucial elk and mule deer winter ranges (Figure 2).

Partners and programs that helped TNC with this important accomplishment include the RMEF, NRCS through the Farm and Ranch Lands Protection Program, WWNRT, WGBGLC, Pheasants Forever, Mule Deer Foundation, WGFD and private philanthropists.

The conservation easement also protects five miles of important stream fisheries and associated riparian zones that benefit white-tailed deer, songbirds, raptors and game birds (Figure 3). It will safeguard open space between the Bighorn National Forest, Wyoming State Trust Lands and the WGFD Bud Love WHMA.

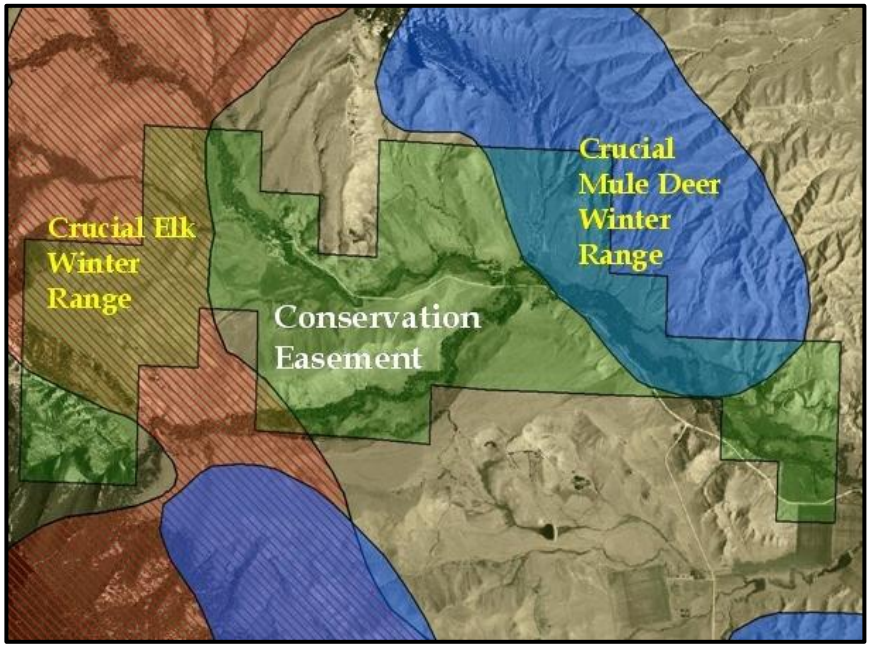


Figure 2. The 2,300-acre HF Bar Ranch conservation easement will protect crucial elk and mule deer winter ranges in perpetuity.

Figure 3. The general landscape of the HF Bar Ranch conservation easement that will be held by TNC. (Rick Pallister picture).

State Acres for Wildlife Enhancement (SAFE) Conservation Reserve Program (Goal 1) – Erika Peckham

Under the NRCS SAFE-CRP, contracts totaling 7,500 acres of land and assistance was provided to nine private landowners in Campbell County (Figure 4). This will effectively restore approximately 2,700 acres of previous dryland farm ground to native range land for various wildlife species. In addition to seeding a variety of grass and forb species, plans include seeding approximately 140 acres of sagebrush under one of these contracts. In addition to the 2,700 acres of restoration, there will be another 5,000 acres enhanced through disking, additional inter-seeding, or burning. Lands enrolled under these SAFE-CRP contracts will also be deferred from grazing for up to a 15-year period to allow for optimum growth and wildlife cover.

Figure 4. SAFE-CRP planting, Campbell County.

Black Hills National Forest Beaver Transplants (Goal 2) – Travis Cundy

Five beaver were transplanted to a watershed segment on the Black Hills National Forest. The ponds established by new beaver colonies (Figure 5) will retain and slowly release runoff water, thus augmenting stream flows later into the year and provide habitat for various fish and wildlife.

Figure 5. Beaver dispersed from the original tributaries targeted with transplants on the Black Hills National Forest. As desired, beaver dams raise the streamside water tables and increase late season stream flows.

North Tongue River Streambank Biorevetments (Goal 2) – Travis Cundy

Streambank biorevetment efforts began in 2010 on the North Tongue River to stabilize eroding streambanks and reduce sediment inputs into the stream. Additional willow sprigging and sedge rootstock plantings were completed in 2011 along a segment of North Tongue River with volunteers from the Bighorn National Forest and the Little Bighorn Chapter of TU. About 500 willow sprigs and 100 sedge root stock plantings were completed by volunteers along two segments of eroding streambanks totaling about 600 feet in length. Survival of sprigs into fall in the presence of cattle grazing has been encouraging, although the goal of establishing vigorous vegetation to stabilize the streambank is yet to be met. Monitoring is continuing to assess the survival of the plantings and the effectiveness of plantings at stabilizing the toe and floodplains interface of the streambank segments (Figure 6).

Figure 6. Willow sprig plantings were completed along an eroding streambank segment on the North Tongue River.

Fish Passage and Diversion Screening Block Grants (Goal 2) – Travis Cundy

Cost share assistance via fish passage funding available through the department continued with the Sheridan County and Lake DeSmet conservation districts. The intent is to promote upstream fish passage at and screen fish from irrigation diversions at on Clear Creek and the Tongue River. Final grading of the Tongue River Diversion ramp was completed in spring 2011 (Figure 7). Retrofitting of the Watt Diversion wedge wire screen on Clear Creek with a bar rack was completed in early 2011 (Figure 8).

Figure 7. The Tongue River Diversion screen and ramped vane structure are depicted following high flows in 2011. The ramp was completed in spring 2011, while the vane structure and screen were completed previously.

The screens collected excessive algae during high flows in 2010, inhibiting water delivery. The wedge wire panels were replaced with ¾-inch opening bar racks prior to the 2011 irrigation season and operated throughout the 2011 irrigation season. Project development continued at other sites, one each on Big Goose Creek and Clear Creek. We thank the conservation districts for their efforts to administer these projects.

Figure 8. The Watt Diversion on Clear Creek depicting the problem wedge wire screens.

Kendrick Dam Fish Bypass Channel Slope Remediation (Goal 2) – Travis Cundy

Elevations along the Kendrick Dam fish bypass channel on Clear Creek were assessed to evaluate slope consistency. A consistent slope is needed to provide optimal sediment transport and fish passage. The bed and water surface slopes along the channel were uneven (Figure 9). The inconsistent slopes increase the likelihood of sediment deposition and reduce the likelihood of high flow fish passage.

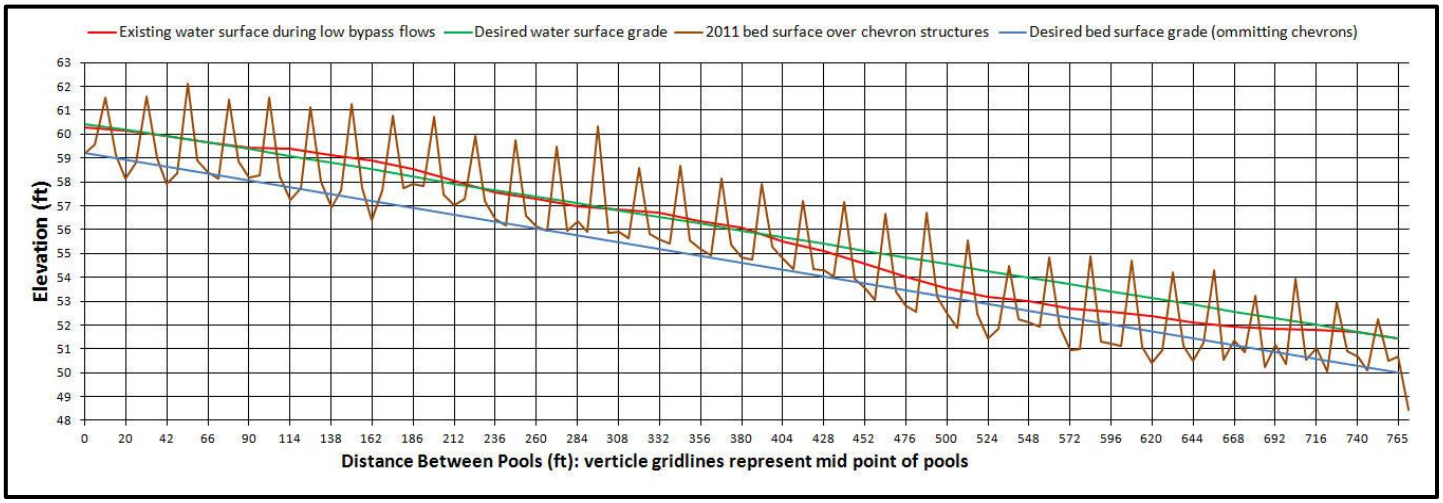


Figure 9. Elevation profiles depicting the 2011 and desired bed and water surface grades along the Kendrick Dam fish bypass channel. Elevation surveys will be repeated in 2012 to assess the grade adjustments obtained during the fall 2011 slope remediation efforts.

A contractor was retained in fall 2011 to adjust the slope of the bypass channel and the function of the water control structure. Rip-rap fill was added and removed from strategic locations along the channel to even the bed surface grade and boulder chevrons were reset at elevated heights to foster consistent water surface elevation transitions between the chevron grade control structures (Figure 10). The bypass allows fish from seven stream-miles of Lower Clear Creek and the Powder River to access 36 stream miles of Clear Creek previously blocked by Kendrick Dam. Thanks to the Pee Gee Ranch for their continued cooperation on this project.

Figure 10. The Kendrick Dam fish bypass channel following slope remediation efforts in fall 2011.

Department biologists continued sampling fishes using the bypass in 2011 with a picket weir trap within the bypass water control structure (Figure 11). The weir trap functioned less than optimally. Thus far, channel catfish, goldeye, river carpsucker, plains minnow and flathead chub, all of which were previously isolated

Figure 11. Fisheries biologists sampled fish use of the Kendrick Dam bypass channel in 2011 using a picket weir and fish trap system.

below the dam, have moved upstream past the dam. Passage by sauger is expected, but has not been documented. Shovelnose sturgeon and sturgeon chub may also use the bypass, although both species are rare in Lower Clear Creek.

Crook County Area Sage-Grouse Conservation Initiative (Goal 2) – Erika Peckham

An in-depth range inventory and analysis and grazing plans on approximately 43,000 acres on ranches in Crook County to benefit sage-grouse is being conducted under the NRCS SGI Program (Figure 12). The goal is to develop a grazing system with two private landowners that will provide residual grass cover to improve sage-grouse nesting and brood-rearing habitat.

Figure 12. Crook County area Sage-grouse Initiative Analysis.

State Acres for Wildlife Enhancement (SAFE) Sagebrush-Grassland Restoration (Goal 2) – Bert Jellison

The purpose of SAFE is to create, enhance or restore critical habitat by the conversion of cropland to either introduced or native perennial plant communities. One of the primary goals of the program is to restore fragmented sage-grouse habitat. A secondary goal is to improve mule deer habitats. Mule deer and sage-grouse have experienced notable declines in this area, as well as statewide. Mule deer will benefit from the planting of nutritious forbs (e.g. legumes) and the establishment of shrubs, such as winterfat, fourwing saltbush and big sagebrush. Pronghorn will also benefit from mule deer and sage-grouse habitat enhancements.

Figure 13. The SAFE program is restoring fragmented sage-grouse habitats in areas negatively affected by agricultural tillage.

This habitat restoration will help restore cropland to native or introduced grasses and forbs to provide grassland-sagebrush habitats suitable for sage-grouse, sharp-tailed grouse, grey partridge, ducks, geese, mule deer, pronghorn antelope, wild turkeys and small mammals. Early seral habitat types with high forb components also serve as important areas for pollinator insects (Figure 13).

In Sheridan County, $238,387 went to the Farm Service Agency's SAFE program and funded one contract. It will effectively restore

around 318 of cropland to native grassland selected with wildlife species in mind. There will also be around 96 acre of sagebrush that will be planted in this contract to restore sage-grouse habitat. In addition to the 318 acres of restoration, there will be 298 acres that will be enhanced by planting forbs and shrub components, primarily to enhance mule deer habitat. A total of 1,818 acres will be enhanced throughout the contract. All acres will be deferred from grazing for a ten-year period to allow for optimum growth and wildlife cover.

Curlleaf Mountain Mahogany Restoration (Goal 2) – Bert Jellison

Curlleaf mountain mahogany (mahogany) is a drought tolerant, slow growing and long-lived evergreen shrub that exists on well-drained nutrient poor soils. The preservation of functional mahogany habitats is essential for maintaining the diversity and abundance of wildlife in the region. Mahogany benefits wildlife by providing crucial forage for wintering ungulates (Figure 14). While comprising only 5% of the landscape in the Kaycee, WY area, mahogany accounted for 75% of the discerned fragments from mule deer fecal samples, which were collected on their winter range. The shrub also provides thermal cover, hiding cover and nesting cover for a variety of wildlife species. Threats to mahogany in the region include fire and encroachment by conifers.

Figure 14. Studies have shown that curlleaf mountain mahogany is crucial to mule deer.

Mature mahogany is largely shade intolerant. The removal of mahogany due to encroachment by conifers depends largely on the density of conifers. Aggressive infestations of conifers eventually lead to the loss of entire mahogany stands. To help prevent conifers from replacing stands of mahogany, the Lost Creek and Barnum Area projects are underway and described below.

Lost Creek Project - The BLM's Casper Field Office initiated this vegetative treatment project in coordination and partnership with the WGFD, WWNRT Fund, RMEF, and the Mule Deer Foundation. The project area is located in the southern Big Horn Mountains of northern Natrona County. Approximately 2,700 acres are identified for treatment and will occur in relatively small blocks over a 10-year period. Legal access to the project area is available through BLM-administered lands and state lands from the 33-Mile Stock Driveway (Natrona County Road 110). In 2011, a 200 acre block of mahogany was mechanically treated to remove conifer encroachment (Figure 15).

Figure 15. Mechanical treatment is accomplished using a hand crew with chain saws and pruning loppers.

Barnum Area Project- WGFD initiated this vegetative treatment project, since it occurs on WGFD, private, state and BLM lands. Funding partners include WWNRT, WGBGLC, Mule Deer Foundation, WGFD Trust Fund, BLM and Wyoming Conservation Corps, who were financially sponsored by Devon Energy. These sites are located along the eastern foothills of the southern Big Horn Mountain range near Barnum, WY. The town of Kaycee is approximately 17 miles east of the project area. The first group of mahogany communities proposed for mechanical treatment involves 1,165 acres, of which 813 have been treated (Table 1).

Table 1. Conservation practice achievements to date and for 2011.

Conservation Practices	2011 Achievements	Program Achievements to Date
Lost Creek Project- Mechanically remove limber pine from 2,700 acres of mahogany stands.	200 acres treated.	280 acres treated.
Barnum Area Project- Mechanically remove limber pine, ponderosa pines and juniper from 1,165 acres of mahogany stands.	813 acres treated.	813 acres treated.

The Wyoming Conservation Corps treated 126 acres in the month of August, 2011 (Figure 16). In November and December of 2011, a contractor hired by the WGFD partially treated another 687 acres. All but the steeper slopes were treated at that time. These areas will be completed once snow and ice melt from the north-facing slopes.

Figure 16. The Wyoming Conservation Corps, who were sponsored by the BLM and Devon Energy, treated approximately 126 acres of curlleaf mountain mahogany to conserve crucial mule deer winter ranges. WCC participants include (from left to right), Bill Ostheimer (BLM project coordinator), Kelly Tobin, Mathew Bushek, Josh Zeeb, James Johnson, Dillon Earl Levi, Josh Scheffert, Andrea Lyon and Jessie Irish.

Gates-Yonkee Oxbow Restoration (Goal 2) – Erika Peckham

This restoration effort to improve forage and cover for a variety of wildlife utilizing riparian habitat totaling about 14 acres of riparian habitat and about 2,000 linear feet along Wild Horse Creek was completed in the fall of 2011 (Figure 17). The adjacent portions of Wild Horse Creek are currently enrolled in FSA's Continuous Conservation Reserve Program. In-stream structures were constructed to allow water flow to be restored to an old oxbow that was plugged around 70 years ago.

Figure 17. Wild Horse Creek Oxbow Restoration.

East Slope Big Horn Mountain Aspen/Willow Recovery (Goal 2) – Bert Jellison

In many locations along the east slope of the Big Horn Mountains, aspen and willow resources are being suppressed or eliminated by livestock and big game. Unless fenced, few aspen clones are able to regenerate and grow above the browse zone. In this picture (Figure 18), livestock and big game have been excluded from aspen for 25 years. Young aspen are absent outside the exclosure. In the background, conifers have been cut down by the Bighorn National Forest to reduce competition with mature aspen, in hopes their vigor can be maintained until the next fire event.

Last year, willow, aspen and adjacent herbaceous vegetation were analyzed to diagnose nutrient deficiencies in plants that occur along the east slope of the Bighorn National Forest. We need to know what minerals are lacking in the environment, but accumulated in willow and aspen browse that would drive livestock and big game to over utilize these resources. Samples were taken where heavy browsing is documented and analyzed at Colorado State University's Soil, Water and Plant Testing Laboratory.

Figure 18. Aspen exclosure fence on the east slope of the Big Horn Mountains where livestock and big game use has been excluded for 25 years.

Results were compared to the nutritional requirements of wild and domestic ungulates. A second group of samples were sent for analysis this year. We wanted to know where these nutrients accumulated in aspen and willow. Were they in the leaves or the woody material?

As shown in Table 2, we determined it is possible that cattle and wildlife are seeking aspen and willow browse for their crude protein (%CP), energy, phosphorus (P), magnesium (Mg) and zinc (Zn) content. Leaf material was much higher in all nutrients, compared to the woody material of the twig. These nutrients are lacking in adjacent grass species. Although forbs are more nutritional, they are generally in short supply during the late summer to early fall period, when both cattle and big game seem to prefer the browse.

Table 2. Forage analysis results relative to the needs of a mother cow (provided by Dr. Blain Horn, UW Cooperative Extension Service).

Year	Plant Type	%CP	%TDN	NEm	P	K	Ca	Mg	Fe	Mn	Zn	Cu	Mo
2010	Riparian Forb	14.0	54	0.50	0.31	1.04	0.78	0.45	449	112	41	6.9	1.05
2010	Upland Forb	12.1	58	0.55	0.30	1.08	0.96	0.33	168	65	28	4.7	0.27
2010	Sedge	11.4	63	0.64	0.19	0.88	0.29	0.16	274	376	26	2.4	1.23
2010	Riparian Grass	8.6	54	0.50	0.16	0.60	0.20	0.11	158	102	17	3.1	1.00
2010	Upland Grass	8.7	59	0.58	0.16	0.72	0.24	0.10	105	86	18	3.0	0.70
2010	Aspen	12.7	67	0.70	0.26	0.63	0.59	0.20	102	45	80	5.5	0.00
2010	Willow	13.1	66	0.67	0.27	0.45	0.39	0.20	114	298	102	4.3	0.35
2011	Aspen leaf	13.2	78	0.85	0.29	0.55	1.01	0.26	75	63	91	5.8	0.78
2011	Aspen twig	5.5	52	0.46	0.17	0.41	0.51	0.12	45	32	78	6.9	0.20
2011	Willow leaf	16.0	76	0.82	0.34	0.53	0.61	0.28	87	219	92	4.1	0.71
2011	Willow twig	8.7	51	0.45	0.17	0.27	0.40	0.13	42	127	151	6.5	0.26

Green values meeting her needs

Red values not meeting her needs

Yellow values borderline

White values within green box may be why animals seek aspen and willows as grasses are low

A report will be written by the University of Wyoming Cooperative Extension Service. It will guide livestock producers in the selection of supplements that fulfill nutritional gaps that may be encouraging the selection of aspen and willow (to satisfy this demand). We plan to test this management tool, to see if aspen and willow resources can be protected by providing an alternative source of minerals.

Buffalo Creek Riparian Restoration (Goal 2) – Erika Peckham

WWNRT spent $4,436.31 to continue riparian restoration in a portion of the Buffalo Creek drainage and associated small tributaries. This was to be the second phase of a project started in the spring of 2009, and was accomplished by erecting a one-wire electric fence around selected draws that will be rested from grazing. This project will protect and allow around 28 acres of critical riparian habitat to rejuvenate.

South Tongue River Watershed Inventory and Rehabilitation Project Development (Goal 2) – Travis Cundy

Interdisciplinary watershed assessments were completed with Bighorn National Forest personnel using the Proper Functioning Condition methodology. The intent was to identify conditions of stream and riparian habitats, potential sources of watershed instability, potential opportunities for rehabilitation actions and establish a baseline for future interdisciplinary monitoring. Assessments focused on meadow reaches with less than a 2% stream gradient. Meadow reaches demonstrate the most potential for stream and riparian habitat improvement. Twenty reaches comprising 14.7 miles (59%) were rated as "proper functioning condition," three reaches comprising 1.9 miles (8%) were "functioning at risk" with an upward trend, five reaches comprising 1.7 miles (7%) were "functioning at risk" with a downward trend and six reaches comprising 6.4 miles (26%) were "functioning at risk" with no apparent trend (Figure 19). The trend of bunch willow (non-rhizomatous) communities along some reaches rated as "proper functioning condition" also appeared to be downward.

Potential remedial actions conceived during these interdisciplinary assessments were compiled by the Bighorn National Forest in a framework watershed action plan for the Upper South Tongue Subwatershed. Passive rehabilitation treatments using fencing along reaches of Sucker Creek and the West Fork of the South Tongue River are being pursued for implementation beginning in 2012. Replacing a culvert crossing along Highway 14 on Sheeley Creek, which has contributed to stream and riparian function impairment, was submitted for the Wyoming Highway Department to consider during their scoping process to develop rehabilitation plans for a section of Highway 14 within the Tongue River Watershed.

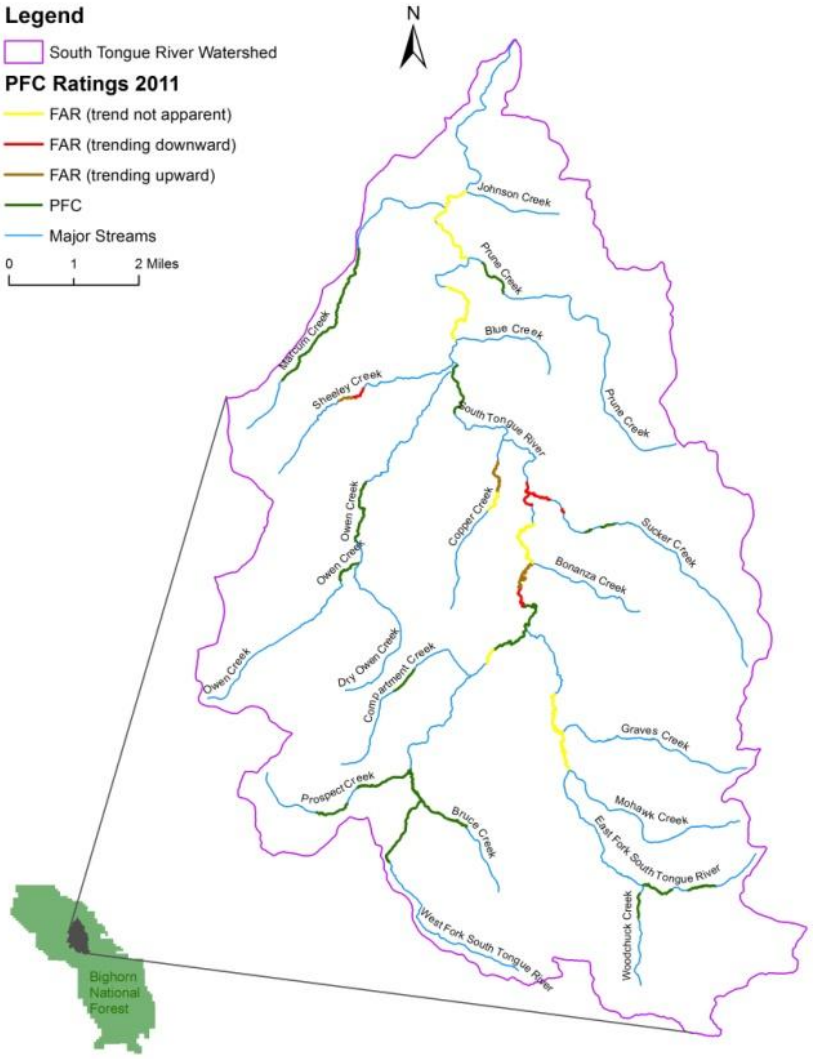


Figure 19. Location of the Tongue River Watershed (Upper and Lower South Tongue River Subwatersheds) on the Bighorn National Forest and the results of Proper Functioning Condition assessments along meadow stream segments during 2011. These low gradient reaches represent the best potential for stream and riparian habitat improvement in the watershed.

Sagebrush Community Restoration after a Wildfire in Core Sage-grouse Habitat (Goal 2) – Bert Jellison

This project was led by the Lake DeSmet Conservation District (LDCD) and the ranch owner to reestablish sagebrush and desirable forbs on lands blackened by a wildfire in 2011. Funding came from the LDCD and the Governor's Sage-Grouse Fund via the Northeast Wyoming Sage-Grouse Local Working Group in cooperation with NRCS and WGFD.

Approximately 250 acres (of the 270-acre wildfire) were seeded in March and April, using a pasture aerator with mounted seed boxes (Figure 20). Approximately 130 acres were seeded with sagebrush and the remaining 125 acres were planted in a mixture consisting of fourwing saltbush, winterfat, American vetch, prairie cone flower and other forbs preferred by sage-grouse.

Figure 20. A pasture aerator implement was used to prepare a seedbed and place sagebrush and other seed in contact with the soil. Approximately 130 acres of sagebrush were planted to replace what the wildfire removed (LDCD photo).

A monitoring plan was developed that follows the protocol established by the BLM's publication "*Sampling Vegetation Attributes", Interagency Technical Reference, Technical Reference 1734-4*." First year monitoring was conducted on March 21st, following the sagebrush planting. LDCD personnel, NRCS and WGFD were involved in establishing the baseline data. Four randomly selected sites were sampled within the treated area, as well as two un-burned control sites. Transects were re-run after the first growing season and some sagebrush plants were found.

Stateline Project (Goal 2) – Erika Peckham

In 2011, $10,000 WGFD trust fund monies were granted to the BLM to implement the Stateline Project near Newcastle, WY. The project goal was to enhance approximately 1,000 acres of conifer encroached mountain shrub and riparian meadow habitats, address beetle infestations and reduce wildfire risk. Treatments consisted of various mechanical conifer removal and prescribed fire. In addition, juniper will be mechanically removed from true mountain mahogany and sagebrush communities to promote healthier mountain shrub stands that provide winter habitat for deer and elk in the area. During 2011, the BLM contracted removal of ponderosa pine and juniper on a portion of the project area.

Triple T Land and Livestock Mule Deer Legume Seeding (Goal 3) – Erika Peckham

A total of 112 acres on the Triple T Ranch was enrolled in the Mule Deer Legume Seeding Program. A total of $2,240 was spent on this project. This project served to reestablish alfalfa in an area used frequently by mule deer to enhance their nutritional needs.

Habitat Extension Services (Goal 2) and Information and Education (Goal 4) - Erika Peckham

In 2010, 35 landowner contacts were made, with 17 of those resulting in various on-the-ground management projects. During the year, there was direct involvement in 5 Environmental Quality Incentives Program (EQIP) and assistance with on-going EQIP projects, 9 SAFE CRP contracts and ongoing monitoring on 2 CCRP. Reviews and comments were provided on another 30 NRCS Farm Bill projects having the potential to affect wildlife in Campbell, Crook and Weston counties. Numerous youth educational activities concerning the importance of habitat to wildlife were made during the year. One significant one-on-one rangeland and wildlife habitat field and information was conducted with Dr. Roy Roath and an area Crook County rancher.

Extension Services to Landowners, Organizations and Agencies and Educational and Information Services (Goals 4 and 5) – Bert Jellison

Work was done in partnership with the NRCS offices in Sheridan, Buffalo and Kaycee to help deliver Farm Bill programs and extension services. Twenty-six landowner and consultant contacts were made this year resulting in on-the-ground projects and a variety of information and education services were provided during the year. Notable assistance was provided on NRCS SGI applications and FSA/NRCS SAFE program enrollment. In addition, reviews and comments were prepared on 20 NRCS projects in Johnson and Sheridan counties. A number of formal presentations were made and education posters related to wildlife habitat were prepared for various functions.

Aquatic Habitat Technical Assistance and Rehabilitation Project Development (Goal 5) – Travis Cundy

Twenty-four habitat improvement-related projects were done in cooperation with landowners, consultants and other agency representatives. These included 10 landowner or agency information and project review requests, 3 stream assessment and design projects, 1 active stream rehabilitation, 1 reservoir rehabilitation design and passive stream rehabilitation effort, 8 fish passage or diversion screening design projects, and 1 beaver transplant request on private lands.

Many projects are progressing toward implementation with and without cost share funding assistance requests from the WGFD. Project development or funding assistance was pursued or secured for seven of the fish passage and screening projects: French Creek (3), Clear Creek (1), South Piney Creek (1), Big Goose Creek (1) and the Tongue River (1). Stream rehabilitation plans were devised to enhance about 1,800 feet of the Tongue River within Scott Bicentennial Park in Dayton, WY. The WGFD is partnering with the town of Dayton and the Sheridan County Conservation District to fund the project. Finally, a reservoir rehabilitation and passive stream rehabilitation project along Middle Clear Creek (Figure 21) is being developed. The WGFD is partnering with the YMCA of the Bighorns to enlarge the reservoir. Sedimentation reduced the surface area of the reservoir about 40% between

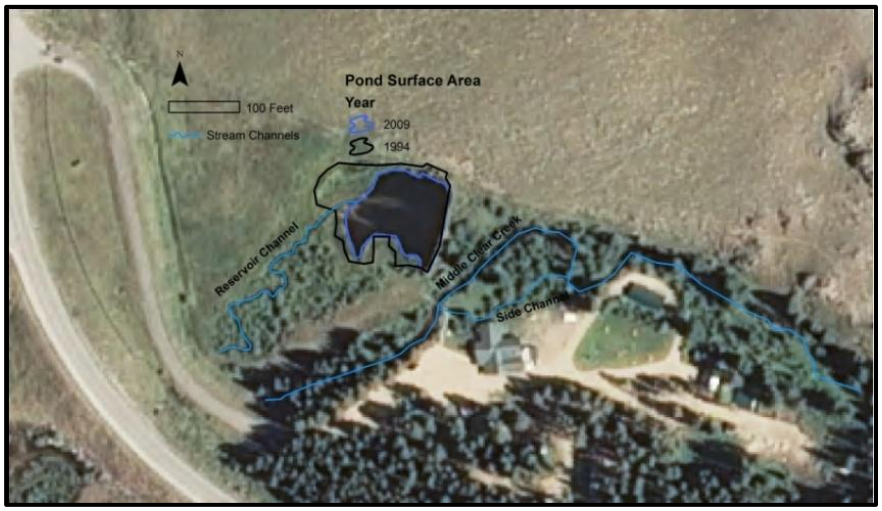


Figure 21. The aerial photo depicts the YMCA of the Bighorns Camp Roberts property located along Middle Clear Creek.

1994 and 2009. Streambank maintenance processes will also be improved in 1,200 feet of mainstem Middle Clear Creek and 400 feet of the reservoir channel by improving sediment routing in the stream system.

Sand Creek Public Access Area (Goal 5) – Travis Cundy

Three hundred-twenty-four head of cattle were grazed on the Sand Creek public access unit from mid- to late-May. This use equated to about 110 animal unit months (0.34 months * ~324 animal units).

Wildlife Habitat Management Areas (Common Goals) – Seth Roseberry

- On **Kerns WHMA**, approximately 76 acres of noxious weeds were controlled and 10 miles of elk fence was maintained.
- On **Amsden WHMA**, approximately 30 acres of noxious weeds were controlled and 10.5 miles of elk fence was maintained. 50 acres of hay meadow were irrigated and harvested through an AIPA (Figure 22).
- 34 acres of noxious weeds were controlled on **Bud Love WHMA** and one mile of electric fence was installed with an additional 12.6 miles of elk fence maintained.
- 27 acres of noxious weeds were controlled on **Ed O. Taylor WHMA** and 20 miles of boundary fence was maintained.
- Participated in the Lake DeSmet Counties Coalition JPB meetings to help provide feedback on shoreline regulations that may be placed on lands where the WGFC is looking at acquiring public use rights.

Figure 22. Amsden WHMA elk fence north of Dayton, WY.